

## Demonstration of a novel, ton-scale, pixel-readout LArTPC for the DUNE Near Detector

*Friday, 5 August 2022 11:55 (20 minutes)*

To cope with the high event pile-up, the liquid argon time projection chamber of the near detector complex of the Deep Underground Neutrino Experiment relies on an innovative modular design featuring an advanced high-coverage photon detection system, a true 3D pixelated charge readout, and a low-profile resistive-shell field cage. The capabilities of this detector, including the performance of the charge and light readout systems, the signal matching between the two, the detector purity, and the response uniformity, have been demonstrated with two ton-scale prototypes operated at the University of Bern that acquired large samples of cosmic ray data. The data have been compared to a microphysical detector simulation, performed with highly-parallelized GPU algorithms. The main results from the analysis of these data sets, as well as the overall status of the ND-LAr detector development, will be presented in this talk.

### Attendance type

In-person presentation

**Primary author:** Dr WOLCOTT, Jeremy (Tufts University)

**Co-authors:** MASTBAUM, Andrew (Rutgers University); OCHOA, J. Pedro (University of California at Irvine)

**Presenter:** Dr WOLCOTT, Jeremy (Tufts University)

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